

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

5/22/2014

Certified Mail

Todd Brady
American Landfill Inc.
7916 Chapel Street SE
Waynesburg, OH 44688

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 1576181541
Permit Number: P0115400
Permit Type: Administrative Modification
County: Stark

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Canton City Health Department at (330)489-3385 or the Office of Compliance Assistance and Pollution Prevention at (614)644-3469.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA
Canton; Pennsylvania; West Virginia



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
American Landfill Inc.**

Facility ID:	1576181541
Permit Number:	P0115400
Permit Type:	Administrative Modification
Issued:	5/22/2014
Effective:	5/22/2014



Division of Air Pollution Control
Permit-to-Install
for
American Landfill Inc.

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Final Permit-to-Install
American Landfill Inc.
Permit Number: P0115400
Facility ID: 1576181541
Effective Date: 5/22/2014

Authorization

Facility ID: 1576181541
Facility Description: MSW landfill allowed to dispose of Regulated Asbestos Containing Materials, solidifies liquid wastes and disposes of the resulting solid wastes.
Application Number(s): A0048276, A0049033
Permit Number: P0115400
Permit Description: American Landfill is installing a Landfill Gas CO2 Removal Project, as part of the existing landfill gas collection and control system P902, to increase the methane fraction (and thus heating value) of landfill gas currently sold to a gas utility. The project will use a Pressure Swing Adsorption unit to further process the landfill gas by removing CO2. The off-gasses resulting from the removal of CO2 will be combusted in a dual-zone Thermal Oxidizer Unit. The Thermal Oxidizer Unit will also be capable of combusting landfill gas collected directly from American Landfill.
Permit Type: Administrative Modification
Permit Fee: \$500.00
Issue Date: 5/22/2014
Effective Date: 5/22/2014

This document constitutes issuance to:

American Landfill Inc.
7916 Chapel Street, S.E.
Waynesburg, OH 44688

of a Permit-to-Install for the emissions unit(s) identified on the following page.

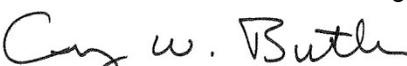
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Final Permit-to-Install
American Landfill Inc.
Permit Number: P0115400
Facility ID: 1576181541
Effective Date:5/22/2014

Authorization (continued)

Permit Number: P0115400

Permit Description: American Landfill is installing a Landfill Gas CO2 Removal Project, as part of the existing landfill gas collection and control system P902, to increase the methane fraction (and thus heating value) of landfill gas currently sold to a gas utility. The project will use a Pressure Swing Adsorption unit to further process the landfill gas by removing CO2. The off-gasses resulting from the removal of CO2 will be combusted in a dual-zone Thermal Oxidizer Unit. The Thermal Oxidizer Unit will also be capable of combusting landfill gas collected directly from American Landfill.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P902
Company Equipment ID:	MSW Landfill
Superseded Permit Number:	15-01601
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
American Landfill Inc.
Permit Number: P0115400
Facility ID: 1576181541
Effective Date:5/22/2014

A. Standard Terms and Conditions



1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e)General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.



- b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

4. Monitoring and Related Record Keeping and Reporting Requirements

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Canton City Health Department.



- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Canton City Health Department. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Canton City Health Department every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Canton City Health Department in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted



local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

- b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
 - (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c) The permittee shall submit progress reports to the Canton City Health Department concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
 - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.



8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Canton City Health Department.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Canton City Health Department. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s) not exempt from the requirement to obtain a Permit-to-Install.

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the



Director within a reasonable time before the termination date and the permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.



13. Construction Compliance Certification

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

18. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

19. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.



Final Permit-to-Install
American Landfill Inc.
Permit Number: P0115400
Facility ID: 1576181541
Effective Date:5/22/2014

B. Facility-Wide Terms and Conditions



1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.
2. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions:
 - a) National Emission Standards for Hazardous Air Pollutants (NESHAP) for existing and new municipal solid waste (MSW) landfills are established within 40 CFR Part 63, Subpart AAAA, §63.1930. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR Part 60, Subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the Startup, Shutdown, and Malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.
 - b) Pursuant to §63.1940, an affected source is defined as follows:
 - (1) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.
 - (2) A new affected source of this subpart is an affected source that commenced construction or reconstruction after November 7, 2000. An affected source is reconstructed if it meets the definition of reconstruction in 40 CFR 63.2 of Subpart A.
 - (3) An affected source of this subpart is existing if it is not new.
 - c) Based upon the above definition, American Landfill is an existing affected source. Pursuant to §63.1945(d), "if your landfill is an existing affected source and is a major source or is collocated with a major source, you must comply with the requirements in §63.1955(b) and §63.1960 through §63.1980 by the date your landfill is required to install a collection and control system by §60.752(b)(2), the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 13, 2004, whichever occurs later." As such, compliance with this subpart was required by January 13, 2004.
 - d) Pursuant to §63.1950, the permittee is no longer required to comply with the requirements of this subpart when it is no longer required to apply controls as specified in 40 CFR §60.752(b)(2)(v).
 - e) Pursuant to §63.1955, the permittee is required to comply with the requirements of 40 CFR Part 60, Subpart WWW. If you are required by 40 CFR §60.752(b)(2) to install a collection and control system, you must comply with the requirements in §63.1960 through §63.1985 and with the general provisions of this part specified in Table 1 of this subpart. For approval of collection and control systems, which include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, record keeping or reporting provisions, you must follow the procedures in 40 CFR §60.752(b)(2). If alternatives have already been approved under 40 CFR Part 60 Subpart WWW, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements in 40 CFR



Part 63, Subpart A as specified in Table 1 of this subpart, and all affected sources must submit compliance reports every 6 months as specified in §63.1980(a) and (b). These reports include information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3-hour monitoring block average.

- f) Pursuant to §63.1960, compliance is determined in the same way it is determined for 40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR §60.756(b)(1), (c)(1), and (d) of Subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. Finally, you must develop and implement a written SSM plan according to the provisions in 40 CFR §63.6 (e)(3). A copy of the SSM plan must be maintained on-site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.
- g) Pursuant to §63.1965, a deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.
 - (1) A deviation occurs when the control device operating parameter boundaries described in 40 CFR §60.758(c)(1) of Subpart WWW are exceeded.
 - (2) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.
 - (3) A deviation occurs when a SSM plan is not developed, implemented, or maintained on-site.
- h) Pursuant to §63.1975, averages are calculated in the same way as they are calculated in 40 CFR Part 60, Subpart WWW, except that the data collected during the events listed in paragraphs (1), (2), (3), and (4) of this term are not to be included in any average computed under 40 CFR Part 63 Subpart AAAA:
 - (1) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.
 - (2) Startups.
 - (3) Shutdowns.
 - (4) Malfunctions.
- i) Pursuant to §63.1980(a), the permittee shall keep records and reports as specified in 40 CFR Part 60, Subpart WWW, with one exception: The permittee must submit the annual report described in 40 CFR §60.757(f) every 6 months.



- j) Pursuant to §63.1980(b), the permittee must also keep records and reports as specified in the general provisions of 40 CFR Part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.
- k) Pursuant to §63.1985(a), this subpart can be implemented and enforced by the U.S. EPA or Ohio EPA.
- l) Pursuant to §63.1990, terms used in this subpart are defined in the Clean Air Act, 40 CFR Part 60, Subparts A, Cc, and WWW; 40 CFR Part 62, Subpart GGG, and Subpart A of this part, and this section that follows:
 - (1) Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:
 - a. fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
 - b. fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
 - c. fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.
 - (2) Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.
 - (3) EPA approved State plan means a State plan that EPA has approved based on the requirements in 40 CFR Part 60, Subpart B to implement and enforce 40 CFR Part 60, Subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.
 - (4) Federal plan means the EPA plan to implement 40 CFR Part 60, Subpart Cc for existing MSW landfills located in States and Indian country which State plans or tribal plans are not currently in effect. On the effective date of an EPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR Part 62, Subpart GGG.
 - (5) Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see section 257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.



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- (6) Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

- m) As stated in §63.1955 and §63.1980, you must comply with the applicable requirements of 40 CFR Part 63, Subpart A as specified in Table 1 of Subpart AAAA of 40 CFR Part 63.



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C. Emissions Unit Terms and Conditions



1. P902, MSW Landfill

Operations, Property and/or Equipment Description:

Land disposal of municipal solid waste (including asbestos) and destruction of non-methane organic compounds in municipal solid waste landfill gas. The landfill gas is processed using a four stage compression process and a Pressure Swing Adsorption unit to remove carbon dioxide (gas treatment system) before being delivered to a gas company's natural gas pipeline. The off-gasses resulting from the removal of carbon dioxide are then combusted in a dual-zone Thermal Oxidizer Unit. A landfill gas open flare functions as a backup/supplemental control system.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) g)(1) through (2), and e)(11).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) [Best Available Technology (BAT) requirements] See b)(2)a.	Fugitive Emissions of non-methane organic compounds (NMOC) shall not exceed 167.0 tons per year Fugitive emissions of methane (CH ₄) shall not exceed 26,057 tons/yr Fugitive emissions of volatile organic compounds (VOC) shall not exceed 65.0 tons/yr Fugitive emissions of hazardous air pollutants (HAPs) shall not exceed 23.71 tons/yr Fugitive particulate emissions (PE) from the municipal solid waste (MSW) landfill operations shall not exceed 1.64 tons/yr Visible fugitive PE from non-asbestos operations shall not exceed 10 percent opacity as a six-minute average Best available control measures shall be used



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>for non-asbestos operations that are sufficient to minimize or eliminate visible emissions of fugitive dust</p> <p>See b)(2)w. through b)(2)aa.</p> <p>The requirements established pursuant to this rule are equivalent to the requirements of OAC Chapter 3745-20; 40 CFR Part 61, Subparts A and M; 40 CFR Part 60, Subpart WWW; 40 CFR Part 63, Subpart AAAA and OAC Chapter 3745-19</p>
b.	OAC rule 3745-20 40 CFR Part 61, Subparts A (40 CFR 61.01-19) 40 CFR Part 61, Subpart M (40 CFR 61.140-157)	See b)(2)b. through b)(2)i.
c.	40 CFR Part 60, Subpart A (40 CFR 60.1-19) 40 CFR Part 63, Subpart A (40 CFR 63.1-16)	General Provisions
d.	40 CFR Part 60, Subpart WWW (40 CFR 60.750-759) 40 CFR Part 63, Subpart AAAA (40 CFR 63.1930-1990)	See b)(2)j. through b)(2)t. and c)(3) through (11)
f.	OAC rule 3745-31-05(A)(3) OAC rule 3745-31-05(F) [Voluntary Restrictions to avoid PSD requirements]See b)(2)a. for additional information	<p>Emissions from the control device(s) shall not exceed the following:</p> <p>NMOC emissions shall not exceed 0.80 pound per hour (lbs/hr) and 3.50 tons/yr</p> <p>VOC emissions shall not exceed 0.31 lbs/hr and 1.36 tons/yr</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Particulate emissions with a diameter of 10 microns or less (PE/PM ₁₀) shall not exceed 2.66 lbs/hr and 11.65 tons/yr Carbon monoxide (CO) emissions shall not exceed 58.42 lbs/hr and 235.30 tons/yr Nitrogen oxide (NO _x) emissions shall not exceed 10.74 lbs/hr and 46.30 tons/yr Sulfur dioxide (SO ₂) emissions shall not exceed 2.34 lbs/hr and 10.25 tons/yr Hydrogen chloride (HCl) emissions shall not exceed 1.20 lbs/hr and 5.30 tons/yr See b)(2)u. and b)(2)bb. and c)(10) below
g.	OAC rule 3745-17-07(B)(1)	Not Applicable See b)(2)v.
h.	OAC rule 3745-17-08(B)	Not Applicable See b)(2)v.
i.	OAC rule 3745-19	See c)(2)

(2) Additional Terms and Conditions

- a. This Permit-to-Install (PTI) is an Administrative Modification to PTI 15-01601 issued on July 20, 2006. PTI 15-01601 established Best Available Technology (BAT) for this emissions unit. The BAT emission limitations have been slightly altered as part of this modification by increasing the CO pound per hour (lb/hr) limit, retaining the CO tons/year limit, and decreasing all other emission limitations. This PTI supersedes PTI 15-01601. The main modifications include:
 - i. Allow the facility to install control device(s) in the future as the landfill gas generation increases;
 - ii. Increase the total rolling average landfill gas (LFG) from 2,226,000,000 standard cubic feet (scf) per year to 2,628,000,000 scf/yr fed to the control devices;
 - iii. Establish total rolling average landfill gas (LFG) of 2,273,220,000 scf/yr fed to the flare;
 - iv. Install a Pressure Swing Adsorption (PSA) unit and a dual-zone Thermal Oxidizer Unit (TOU) as part of a Landfill Gas CO₂ Removal Project to be incorporated as part of the existing gas treatment system; and



- v. Landfill gas generated on the facility is captured and collected by the facility's landfill gas collection and control system and then processed by the on-site gas treatment system which includes the Landfill Gas CO₂ Removal system, all of which are included as part of this emission unit. The treated gas is then sent off-site for its subsequent use as pipeline quality natural gas. The on-site gas treatment system is expected to have zero additional emissions. The Landfill Gas CO₂ Removal system is controlled by the TOU. The landfill gas flare functions as a backup/supplemental control system which is only used when the gas treatment system is not operating properly, is taken off-line for maintenance, or if more gas is collected than the gas treatment system can accommodate.

- b. [OAC rule 3745-20-06(B)(1)]
There shall be no visible emissions from asbestos-containing materials (ACM) during on-site transportation, transfer, unloading, deposition or compacting operations.

- c. [OAC rule 3745-20-06(B)(2)]
Deposition and burial operations shall be conducted in a careful manner that prevents asbestos-containing materials from being broken up or dispersed before the materials are buried.

- d. [OAC rule 3745-20-06(B)(4)]
During the unloading, deposition, burial and initial compaction of asbestos-containing waste-materials, the owner or operator of the active waste disposal site shall establish a restricted area adequate to deter the unauthorized entry of the general public and any unauthorized personnel from any location within one hundred feet of the operations.

- e. [OAC rule 3745-20-06(B)(5)]
A hazard warning shall be displayed on signs not less than 20 x 14 inches in size, posted so they are visible before entering an area with asbestos waste disposal operations in progress; or alternatively, mark vehicles used to transport asbestos-containing waste materials with 20 x 14 inch signs so that the signs are displayed in such a manner and location that a person can easily read the legend. Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend:

ASBESTOS WASTE DISPOSAL SITE
DO NOT CREATE DUST
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

Notation:

2.5 cm (1 inch) Sans Serif, Gothic or Block
1.9 cm (¾ inch) Sans Serif, Gothic or Block
14 Point Gothic



Spacing between any two lines must be at least equal to the height of the upper two lines.

- f. The permittee shall cover and compact asbestos wastes in accordance with the following:
 - i. [OAC rule 3745-20-06(B)(3)]
As soon as practical after the placement of friable asbestos, but no later than the end of each working day, the asbestos-containing waste materials deposited at the site during the operating day shall be covered with at least 12 inches of non-asbestos-containing materials. Once the asbestos containing materials are covered, the area may be compacted.
 - ii. [OAC rule 3745-31-05(A)(3)]
Care shall be taken to ensure that disposed asbestos shall not be re-excavated in subsequent operations. Any accidentally exposed material shall be immediately recovered in accordance with the provisions of condition f.i. above.
- g. [OAC rule 3745-31-05(A)(3)]
The permittee shall implement and maintain an "Asbestos Disposal Operating Procedure and Spill Contingency Plan", ("Plan") consisting of authorized personnel training, inspection and disposal operating procedures, non-conforming load response procedures, inventory and maintenance procedures for safety and emissions control equipment, record keeping procedures, and emergency notification procedures. Authorized personnel shall be knowledgeable in the procedures, and the Plan shall be available for inspection at this facility at all times.
- h. [OAC rule 3745-31-05(A)(3)]
Emissions control equipment shall be available for wetting and containing asbestos in the event of a release or non-conforming load disposal. All equipment required to implement the Plan shall be maintained in accordance with good engineering practices to ensure that the equipment is in a ready-to-use condition and in an appropriate location for use.
- i. [OAC rule 3745-20-06(E)]
If this emissions unit is permanently closed, the permittee shall comply with all of the applicable provisions of OAC rule 3745-20-07.
- j. The requirements of 40 CFR Part 63, Subpart AAAA also include compliance with the requirements of 40 CFR Part 60, Subpart WWW.
- k. [40 CFR 60.752(b)(2)(ii)(A)]
The calculated non-methane organic compounds (NMOC) emission rate for this facility is greater than 50 megagrams per year (Mg/yr); therefore, the permittee shall operate a collection and control system that captures the gas generated within the landfill as required below. The active collection system shall satisfy the following requirements:



- i. the system shall be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
- ii. the system shall collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active, or 2 years or more if closed or at final grade;
- iii. the system shall collect gas at a sufficient extraction rate; and
- iv. the system shall be designed to minimize off-site migration of subsurface gas.

l. [40 CFR 60.752(b)(2)(i)(C)]

If the permittee seeks to demonstrate compliance with term b)(2)k. through the use of a collection system not conforming to the specifications provided in term b)(2)o. through q., the permittee shall provide information satisfactory to the Canton City Health Department, Air Pollution Control Division to demonstrate that off-site migration is being controlled.

m. [40 CFR 60.752(b)(2)(i)(A, B, and D)]

The design plan required in this section has been submitted to the Canton City Health Department, Air Pollution Control Division. The design plan included appropriate alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §60.753 through §60.758 proposed by the permittee. The collection and control system design plan conforms to specifications for active collection systems in §60.759 and is approved.

Many site-specific factors must be taken into consideration in landfill gas system design and alternative systems may be necessary. Therefore, the permittee must notify the Canton City Health Department, Air Pollution Control Division when an alternative design is determined to be necessary to meet the requirements of this section.

n. [40 CFR 60.755(b)]

The permittee shall place each well or design component as specified in the approved design plan. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of 5 years or more if active; or 2 years or more if closed or at final grade.

o. [40 CFR 60.759(a)]

The permittee shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Director:

i. [40 CFR 60.759(a)(1)]

The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas



emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

- ii. [40 CFR 60.759(a)(2)]
 The sufficient density of gas collection devices determined in term b)(2)o.i. above shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

- p. [40 CFR 60.759(a)(3)]
 The placement of gas collection devices shall control all gas producing areas, except as provided by terms b)(2)p.i. and ii. below.
 - i. [40 CFR 60.759(a)(1)(i)]
 Any segregated area of non-degradable material may be excluded from collection if documented as provided under term d)(14). The documentation shall provide the nature, date of deposition, location and amount of non-degradable material deposited in the area, and shall be provided to the Canton City Health Department, Air Pollution Control Division and Director upon request.

 - ii. [40 CFR 60.759(a)(1)(ii)]
 Any non-productive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1% of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Canton City Health Department, Air Pollution Control Division and Director upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill.

Emissions from each section shall be computed using the following equation:

$$Q_i = 2 * k * L_o * M_i * \left(e^{-kt_i} * C_{NMOC} * (3.6 * 10^{-9}) \right)$$

Where:

Q_i = NMOC emission rate from the i-th section, in megagrams per year

k = methane generation rate constant, in year⁻¹

L_o = methane generation potential, in cubic meters per megagram solid waste



M_i = mass of the degradable solid waste in the i-th section, in megagrams

t_i = age of the solid waste in the i-th section, in years

C_{NMOC} = concentration of nonmethane organic compounds, in parts per million by volume

3.6×10^{-9} = conversion factor

iii. [40 CFR 60.759(a)(1)(iii)]

The values for k , L_o , and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence. If field testing has not been performed, the default values for k , L_o and C_{NMOC} are provided below:

$k^* = 0.05$ per year

$L_o = 170$ cubic meters per megagram

$C_{\text{NMOC}} = 4,000$ parts per million by volume as hexane

* For landfills located in geographical areas with a thirty-year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorological site, the k value to be used is 0.02 per year.

q. [40 CFR 60.759(b)]

When the permittee constructs new gas collection devices, the permittee shall use the following equipment or procedures:

i. [40 CFR 60.759(b)(1)]

The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to:

- (a) convey projected amounts of gases;
- (b) withstand installation, static, and settlement forces; and
- (c) withstand planned overburden or traffic loads.

The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.



- ii. [40 CFR 60.759(b)(2)]
Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.
- iii. [40 CFR 60.759(b)(3)]
Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings, and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.
- r. [40 CFR 60.752(b)(2)(v)]
The collection and control system may be capped or removed provided that all of the following conditions are met:
 - i. the landfill shall be a closed landfill as defined in 40 CFR 60.751. A closure report shall be submitted to the Canton City Health Department, Air Pollution Control Division as provided in 40 CFR 60.757(d);
 - ii. the collection and control system shall have been in operation a minimum of 15 years; and
 - iii. following the procedures specified in 40 CFR 60.754(b), the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year (55.1 TPY) on 3 successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.
- s. [40 CFR 60.752(b)(2)(v)(A)]
If this emissions unit is permanently closed, a closure notification, as provided for in 40 CFR Part 60.757(d), shall be submitted to the Canton City Health Department, Air Pollution Control Division.
- t. [40 CFR 60.752(b)(2)(iii)]
The collected gas shall be routed to a control system that complies with one of the following options:
 - i. [40 CFR 60.752(b)(2)(iii)(A) and 40 CFR 60.18(c)]
An open flare shall be designed and operated as follows:
 - (a) the flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes, during any 2 consecutive hours;



- (b) the flare shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f); and
- (c) the permittee shall comply with either the requirements in terms (i) and (ii) below or the requirements in term (iii) below:
 - (i) Flares shall be used only with the net heating value of the gas being combusted being 11.2 megaJoule per standard cubic meter (MJ/scm) (300 British Thermal Unit per standard cubic feet (Btu/scf)) or greater if the flare is steam-assisted or air-assisted, or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined as follows or by utilizing methods approved by the Canton City Health Department, Air Pollution Control Division in accordance with 40 CFR Part 60, Subpart WWW:

$$H_t = k * \sum_{i=1}^{i=n} H_i * C_i$$

Where:

H_t = net heating value of the sample, MJ/scm; where the net enthalpy per mole of off gas is based on combustion at 25 degrees Celsius ($^{\circ}\text{C}$) and 760 millimeter of mercury (mm Hg), but the standard temperature for determining the volume corresponding to one mole is 20 $^{\circ}\text{C}$;

k = constant, $1.740 * 10^{-7}$ $^{\circ}\text{C}$ (1/ppm)(g-mole/scm) (MJ/kcal) where the standard temperature for (g-mole/scm) is 20 $^{\circ}\text{C}$;

C_i = concentration of sample component i in parts per million (ppm) on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i = net heat of combustion of sample component i , kilocalorie per gram-mole (kcal/g-mole) at 25 $^{\circ}\text{C}$ and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

- (ii) Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity of less than 18.3 meters per second (m/sec) (60 ft/sec), except:



- 1) steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity of equal to or greater than 18.3 meters per second (m/sec) (60 ft/sec), but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf); and
- 2) steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity of less than the velocity, V_{max} , and less than 122 m/sec (400 ft/sec) are allowed, as determined by:

$$\log_{10} V_{max} = \frac{H_t + 28.8}{31.7}$$

Where:

V_{max} = maximum permitted velocity, m/sec;

28.8 = constant;

31.7 = constant; and

- (iii) Flares shall be used that have a diameter of 3 inches or greater, are non-assisted, have a hydrogen content of 8.0 percent (by volume) or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max} , as determined by the following equation:

$$V_{max} = (X_{h2} - K_1) * K_2$$

Where:

V_{max} = maximum permitted velocity, m/sec;

K_1 = constant, 6.0 volume-percent hydrogen;

K_2 = constant, 3.9 (m/sec)/volume-percent hydrogen; and

X_{h2} = the volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77, or utilizing methods approved by the Canton City Health Department, Air Pollution Control Division in accordance with 40 CFR Part 60, Subpart WWW.

- (iv) Air-assisted flares shall be designed for and operated with an exit velocity of less than the velocity, V_{max} , as determined by the following equation:



$$V_{max} = 8.706 + 0.7084(H_t)$$

Where:

V_{max} = maximum permitted velocity, m/sec;

8.706 = constant;

0.7084 = constant; and

- ii. [40 CFR 60.752(b)(2)(iii)(B)]
A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in §60.754(d) (See section f) below).
 - (a) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.
 - (b) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in 40 CFR 60.756.
- iii. [40 CFR 60.752(b)(2)(iii)(C)]
Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of 40 CFR 60.752 (b)(2)(iii)(A) or (B).
- u. [40 CFR 60.752(b)(2)(iii)]
The emission limitations for the control devices have been established based upon a maximum gas collection rate of 5,000 scfm and the expected landfill gas quality. The landfill's maximum potential to emit is 14,280 scfm as predicted by U.S. EPA's Landfill Gas Estimation program (LANDGEM), AP-42 emission factors, and standard industry assumptions is not expected to occur until 2038 if the facility were to accept its authorized maximum daily waste each day. The facility is currently processing all landfill gas in the gas treatment system prior to delivery to the gas company's natural gas pipeline. Alternate control devices are being permitted as a backup/supplemental control method in the event that the gas treatment system is inoperable and to control emissions from the gas treatment system PSA. Based upon the above, the facility has committed to the following:



- i. The facility shall apply for a permit to install additional control device capacity within 180 days of capturing greater than 90 percent of the maximum landfill gas collection rate (4,500 scfm) as an annual average.
- ii. The facility shall install additional control device(s), as necessary, to maintain compliance with the requirements in 40 CFR 60.752(b)(2)(iii) and the emission limitations contained in term b)(1)e. This will be accomplished by selecting and installing new replacement and/or additional control device(s) when the capacity of the current control method(s)/device(s) will no longer control the volume of gas emitted by the landfill.
- iii. The selected control device(s) must be capable of demonstrating compliance based upon the calculations contained in section f) of this permit.
- v. There are no applicable emission limitations/control measures from OAC rules 3745-17-08(B) and 3745-17-07(B) because the facility is not located in an Appendix A area as specified in OAC rule 3745-17-08.
- w. [OAC rule 3745-31-05(A)(3)]
The permittee shall ensure that solid wastes are deposited, spread, and compacted in such a manner as to minimize or prevent visible emissions of dust. All truckloads of solid waste shall be unloaded in a manner which will minimize the drop height of the solid wastes. Any dusty construction materials, soils or wastes likely to become airborne shall be watered as necessary prior to or during dumping operations in order to minimize or eliminate visible emissions of fugitive dust. Watering shall be conducted in such a manner as to avoid the pooling of liquids and runoff. No dusty material shall be dumped during periods of high wind speed, unless the material has been treated to prevent fugitive dust emissions from becoming airborne.
- x. The following material handling activities are covered by this permit:
 - i. The non-asbestos material handling activities that are covered by this permit and subject to the above-mentioned annual fugitive mass particulate emissions (PE) limitation and the visible fugitive PE limitation for non-asbestos operations are listed below:

Waste handling (depositing, spreading, and compacting)
Landfill daily and intermediate cover handling
Wind erosion from landfill surfaces
General earthmoving and soil handling during landfill construction
Landfill aggregate handling during landfill construction
 - ii. The asbestos-containing material handling activities that are covered by this permit and subject to the above-mentioned visible fugitive PE limitation for asbestos-containing materials operations are listed below:



On-site transportation

Transfer

Unloading

Deposition

Compacting

y. [OAC rule 3745-31-05(A)(3)]
The permittee shall employ best available control measures on all activities listed in term b)(2)x. for the purpose of ensuring compliance with the above-mentioned applicable requirements (particulate emission limitations). In accordance with the permittee's PTI 15-01601 application, the permittee has committed to the following:

- i. covering the active storage piles or spraying them with water or a surfactant solution as necessary to control fugitive dust; and
- ii. covering the inactive storage piles with vegetation or another type of cover or spraying them with water or a surfactant solution as necessary to control fugitive dust.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

z. [OAC rule 3745-31-05(A)(3)]
The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary if there is snow and/or ice cover or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements (particulate emission limitations). Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

aa. [OAC rule 3745-31-05(A)(3)]
Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.

- i. The air contaminants emitted by this emissions unit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.
- ii. The permittee shall employ control measures, including the application of best available technology (BAT), for the purpose of ensuring compliance with OAC rule 3745-15-07.

c) Operational Restrictions

(1) [OAC rule 3745-31-05(A)(3)]



The permittee shall be limited to accepting for disposal no more than 4,605,000 tons of waste material per calendar year.

- (2) [OAC rule 3745-31-05(A)(3)]
There shall be no open burning in violation of OAC rule 3745-19 at this facility.
- (3) [40 CFR 60.753(a)]
The permittee shall operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for 5 years or more if active, or for 2 years or more if closed or at final grade, and as required in 40 CFR 60.752, 40 CFR 60.753, and this permit. The collection and control system shall meet the specifications for an active collection system as required in 40 CFR 60.759, included in this permit.
- (4) [40 CFR 60.753(b)]
The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions:
 - a. a fire or increased well temperature. [The permittee shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR 60.757(f)(1) and as specified in term e)(8)f];
 - b. use of a geo-membrane or synthetic cover. [The permittee shall develop acceptable pressure limits in the design plan]; or
 - c. a decommissioned well. [A well may experience a static positive pressure after the shutdown to accommodate for declining flows. All design changes shall be approved by Ohio EPA and the Canton City Health Department, Air Pollution Control Division.]
- (5) [40 CFR 60.753(c)]
The permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
 - b. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i).
 - c. Unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A except that:
 - i. the span shall be set so that the regulatory limit is between 20 and 50 percent of the span;
 - ii. a data recorder is not required;



- iii. only two calibration gases are required, a zero and span, and ambient air may be used as the span;
 - iv. a calibration error check is not required; and
 - v. the allowable sample bias, zero drift, and calibration drift are plus or minus (\pm) 10 percent.
- (6) [40 CFR 60.753(d) and 40 CFR 60.755(c)(4)(v)]
The permittee shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.
- The permittee shall install a new well or other collection device for any location where the monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period and within 120 calendar days of the initial exceedance. (An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Canton City Health Department, Air Pollution Control Division for approval.)
- (7) [40 CFR 60.753(e)]
The permittee shall operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii) unless the collected gas is routed to a treatment system that processes the collected gas for subsequent sale. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.
- (8) [40 CFR 60.753(f)]
The permittee shall operate the control and/or treatment system at all times when the collected gas is routed to the system.
- (9) [40 CFR 60.753(g)]
If monitoring demonstrates that the operational requirements for negative pressure, interior wellhead temperature, wellhead oxygen or nitrogen concentration, and/or surface methane levels are not met, corrective action shall be taken as specified in the monitoring and recordkeeping requirements for the pressure, temperature, oxygen or nitrogen concentration at each well's gas collection header and surface methane measurements. If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements.



- (10) [OAC rule 3745-31-05(A)(3) and 3745-31-05(F)]
The facility's current control devices, consisting of a TOU and an open flare, shall be limited to inputting combined less than or equal to 2,628,000,000 scf of landfill gas per year rolling average (based on a maximum of 5,000 scfm). The facility's current open flare control device shall be limited to inputting individually a less than or equal to 2,273,220,000 scf of landfill gas per year rolling average. The permittee shall demonstrate compliance upon PTI issuance by using past records of monthly landfill gas input rates. Upon replacement of the current control devices, the permittee shall comply with term b)(2)u. above.
- (11) [40 CFR 60.755(e)]
The provisions of 40 CFR Part 60, Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment of control devices, in which case any deviation from the requirements shall be recorded and included in the semiannual report.
- (12) [40 CFR 63.1960 and 40 CFR 63.6]
The permittee shall develop and implement a written startup, shutdown, and malfunction (SSM) plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on-site.

d) Monitoring and/or Recordkeeping Requirements

- (1) [OAC rule 3745-31-05(A)(3)]
The permittee shall inspect each load of asbestos-containing material delivered to the facility. The inspection shall consist of a visual examination to ensure that each shipment of asbestos-containing materials is received in intact, leak-tight containers labeled with appropriate hazard warning labels, the name of the waste generator, and the location of waste generation. The inspection also shall determine whether the waste shipment records accompany the consignment and accurately describe the waste material and quantity.
- If on the basis of the inspection, the waste material is found to be improperly received, the load shall be disposed of in accordance with the procedures in the "Asbestos Spill Contingency Plan," and the discrepancy shall be noted on the waste shipment records.
- (2) [OAC rule 3745-20-06(C)]
The permittee shall maintain records of the following information:
- a. the waste shipment record form for each shipment of asbestos-containing materials; and
 - b. the location, depth and area, and quantity in cubic yards of all asbestos-containing materials within the disposal site, on a map or a diagram of the disposal area.
- (3) [40 CFR 60.758(a)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of 40 CFR 60.752(b) shall keep for at least 5 years up to



date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

- (4) [40 CFR 60.756(a)]
Except as provided in 40 CFR 60.752(b)(2)(i), each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead, and:
- a. measure the gauge pressure in the gas collection header (at each wellhead) on a monthly basis as provided in 40 CFR 60.755(a)(3);
 - b. monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and
 - c. monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5).
- (5) [40 CFR 60.756(b)]
Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) using an enclosed combustor shall install, calibrate, maintain, and operate the following equipment according to the manufacturer's specifications:
- a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius or ± 0.5 °C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.
 - b. A device that records flow to or bypass of the flare. The owner or operator shall either:
 - i. install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
 - ii. secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (6) [40 CFR 63.756(c)]
Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate the following equipment according to the manufacturer's specifications:
- a. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.



- b. A device that records flow to or bypass of the flare. The owner or operator shall either:
 - i. install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
 - ii. secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (7) [40 CFR 60.756(f)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator seeking to demonstrate compliance with 40 CFR 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.
- (8) [40 CFR 60.758(b)(1) and (b)(4)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment, of the data listed in term d)(8)a. below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.
- a. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii):
 - i. The maximum expected gas generation flow rate as calculated in 40 CFR 60.755(a)(1) (See section f)). The owner or operator may use another method to determine the maximum gas generation flow rate if the method has been approved by the Canton City Health Department, Air Pollution Control Division.
 - ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1).
 - b. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18; continuous records of the flare pilot flame or



flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

- (9) [40 CFR 60.758(c)(1) through (c)(4)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.
- a. The following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f) and term e)(8)f.:
 - i. For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined.
 - ii. For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph 40 CFR 60.758(b)(3).
 - b. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under 40 CFR 60.756.
 - c. Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with 40 CFR 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)
 - d. Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.
- (10) [40 CFR 60.758(d)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.



- a. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under 40 CFR 60.755(b).
 - b. Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from collection as provided in 40 CFR 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in 40 CFR 60.759(a)(3)(ii).
- (11) [40 CFR 60.758(e)]
Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of 40 CFR Part 60, Subpart WWW shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.
- (12) [OAC rule 3745-31-05(A)(3)]
This facility shall maintain monthly records of the amount of landfill gas, in scf, produced by the landfill, the amount of landfill gas, in scf, input to the open flare and/or the enclosed combustor, the number of hours that the open flare and/or enclosed combustor was (were) operated and the amount of landfill gas, in scf, input to the treatment system that processes the gas for subsequent sale or use.
- (13) [OAC rule 3745-31-05(A)(3)]
The permittee shall perform the following inspections:
- a. The permittee shall perform daily inspections to observe the following non-asbestos material handling activities when the activities are being conducted:
 - Waste handling (depositing, spreading and compacting)
 - Landfill daily and intermediate cover handling
 - Wind erosion from landfill surfaces
 - General earthmoving and soil handling during landfill construction
 - Landfill aggregate handling during landfill construction
 - b. For the material handling activities (on-site transportation, transfer, unloading, deposition, and compacting operations) of asbestos-containing materials, the permittee shall perform daily inspections to observe the activities when the activities are being conducted.
 - c. The inspections shall be documented and recorded as required in term d)(15) below.
- (14) [OAC rule 3745-31-05(A)(3)]
No inspection shall be necessary when the non-asbestos material handling activities are not being conducted, when there is snow and/or ice cover, and/or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned



visible fugitive PE limitation. Any required inspection that is not performed due to any of the above-identified events shall be performed during the next inspection pursuant to the minimum inspection frequency.

- a. The purpose of the non-asbestos material handling activities inspections is to determine the need for implementing the control measures specified in this permit to minimize and eliminate visible emissions of fugitive dust from the activities. The inspections shall be performed during representative, normal landfill operating conditions.
- b. The purpose of the asbestos-containing material handling activities inspections is to determine the need for implementing the control measures specified in this permit to eliminate visible emissions of fugitive dust from the activities. The inspections shall be performed during representative, normal landfill operating conditions.

(15) [OAC rule 3745-31-05(A)(3)]

The permittee shall maintain a daily operations log which lists all of the above landfill activities. (Note that if the records required in this Term and Condition exactly duplicate any records required under the facility's Division of Solid and Infectious Waste Management (DSIWM) permit, the DSIWM record will suffice to meet this Term and Condition). The daily operations log shall clearly indicate/contain the following:

- a. the date and whether an inspection was performed and, if not performed, the reason why the inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
- b. the activities which were in operation;
- c. each activity where it was determined by the person conducting the inspection that it was necessary to implement the control measures to meet the above-mentioned visible fugitive PE/PM₁₀ limitation;
- d. whether control measures were employed to minimize or eliminate visible emissions of fugitive dust; and
- e. with regards to the waste handling activities, the amount, in tons, of waste material accepted for disposal.

(16) [OAC rule 3745-31-05(A)(3)]

The permittee shall maintain an annual cumulative (calendar year) record to be updated quarterly:

- a. of days inspections were not performed by the required frequency, and
- b. of days in which control measures were determined to be necessary by an inspector, but were not implemented.



e) Reporting Requirements

(1) [OAC rule 3745-31-05(A)(3)]

The permittee shall submit quarterly reports summarizing the asbestos disposal activities. The reports shall contain the following information:

- a. the name, address and location of the facility, the calendar period covered by the report, and any changes in the methods of storage or the disposal operations; and
- b. a list of all asbestos-containing waste consignments received including: the date received, the name of the waste generator, the name and location of the facility where the load originated, the quantity of asbestos, and any discrepancy or non-conformity discovered.

These quarterly reports shall be submitted to the Canton City Health Department, Air Pollution Control Division no later than January 31, April 30, July 31 and October 31 and shall cover the previous calendar quarters.

(2) [OAC rule 3745-31-05(A)(3)]

As soon as possible and no longer than 30 days after receipt of the asbestos waste, the permittee shall send a copy of the signed waste shipment record to the waste generator.

(3) [OAC rule 3745-31-05(A)(3)]

Upon discovery of a discrepancy between the quantity of asbestos waste designated on a waste shipment record and the quantity actually received, the permittee shall attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the State, local, district, or USEPA regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the Canton City Health Department, Air Pollution Control Division. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) [40 CFR 61.154(h)]

The permittee shall submit, upon closure of the facility, a copy of the records of asbestos waste disposal locations and quantities.

(5) [OAC rule 3745-20-07(D)]

The permittee shall notify the Canton City Health Department, Air Pollution Control Division, in writing, at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. The following information shall be included in the notice:

- a. scheduled starting and completion dates;



- b. reason for disturbing the waste;
 - c. procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material (if deemed necessary, the Director may require changes in the proposed emission control procedures); and
 - d. location of any temporary storage site and the final disposal site.
- (6) [OAC rule 3745-31-05(A)(3)]
The permittee shall notify the Canton City Health Department, Air Pollution Control Division of any load of asbestos-containing material which is rejected, or any non-conforming load disposed of in accordance with the "Asbestos Spill Contingency Plan." Notification shall be provided as soon as possible by a phone contact, followed in writing by the next working day. The written notification shall provide a copy of the waste shipment record ("WSR"), if available, or when waste is not shipped with a WSR, provide available information concerning vehicle identification, source of the load, a description of the load, nature of discrepancy, and the location of disposal. If possible, non-conforming loads of suspect friable material shall be detained, or the location of disposal protected from damage, until the Canton City Health Department, Air Pollution Control Division is informed and provided the opportunity to inspect.
- (7) [OAC rule 3745-31-05(A)(3)]
The permittee shall submit an annual report by April 15th of each year, covering the previous calendar year, of the amount in tons of waste material accepted for disposal in that calendar year.
- (8) Reporting Requirements for Landfill Gas Operations:
- a. [40 CFR 60.757]
The permittee shall submit any and all reports in accordance with the Standards of Performance for Municipal Solid Waste Landfills, 40 CFR 60.757, except as indicated in this and the following term and condition.

The reports shall be submitted to the:

Canton City Health Department, Air Pollution Control Division, 420 Market Avenue North, Canton, OH 44702-1544.
 - b. [40 CFR 60.757(a)]
Each owner or operator subject to the requirements of 40 CFR Part 60, Subpart WWW shall submit an initial design capacity report to the Canton City Health Department, Air Pollution Control Division ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996. The initial design capacity report shall contain the following information:
 - i. A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to



the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

- ii. The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with such parameters as part of the report. The State, Tribal, local agency or Canton City Health Department, Air Pollution Control Division may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.
- c. [40 CFR 60.757(c)]
This facility has fulfilled the requirement to submit the initial collection and control system design plan. Therefore, the permittee is not subject to submitting the collection and control system design plan in 40 CFR 60.752(b)(2)(i) and in 40 CFR 60.757(c) except that this facility shall submit a report certifying that the collection and control system either conforms with the specifications for active collection systems in 40 CFR 60.759 or include a demonstration to the Canton City Health Department, Air Pollution Control Division's satisfaction of the sufficiency of the alternative provisions to 40 CFR 60.759.
- d. [40 CFR 60.757(d)]
Each owner or operator of a controlled landfill shall submit a closure report to the Canton City Health Department, Air Pollution Control Division within 30 days of waste acceptance cessation. The Canton City Health Department, Air Pollution Control Division may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Canton City Health Department, Air Pollution Control Division, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4).
- e. [40 CFR 60.757(e)]
Each owner or operator of a controlled landfill shall submit an equipment removal report to the Canton City Health Department, Air Pollution Control Division 30 days prior to removal or cessation of operation of the control equipment.
 - i. The equipment removal report shall contain all of the following items:
 - (a) a copy of the closure report submitted in accordance with 40 CFR 60.757(d);
 - (b) a copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and



- (c) dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.
 - ii. The Canton City Health Department, Air Pollution Control Division may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met.
- f. [40 CFR 60.757(f)]

By January 31st and July 31st of each year, each owner or operator of a landfill seeking to comply with 40 CFR 60.752(b)(2) using an active collection system designed in accordance with 40 CFR 60.752(b)(2)(ii) shall submit to the Canton City Health Department, Air Pollution Control Division semi-annual reports, in accordance with Part A Standard Terms and Conditions, of the recorded information in terms e)(8)f.i. through vi. below and any reportable exceedances for enclosed combustion devices and flares as described in term d)(9).

 - i. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c) and (d).
 - ii. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under 40 CFR 60.756.
 - iii. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
 - iv. All periods when the collection system was not operating in excess of 5 days.
 - v. The location of each exceedance of the 500 parts per million methane concentration as provided in 40 CFR 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.
 - vi. The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3) and (5), and (c)(4) of 40 CFR 60.755.
- g. [40 CFR 60.757(g)]

The permittee shall submit the following information with the initial performance test report required pursuant to 40 CFR 60.8, if not already completed:

 - i. a diagram of the collection system showing collection system positioning, including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;



- ii. the data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;
 - iii. the documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material;
 - iv. the sum of the gas generation flow rate for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area;
 - v. the provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
 - vi. the provisions for the control of off-site migration.
- (9) [OAC rule 3745-31-05(A)(3)]
By April 15th of each year, the permittee shall submit an annual report covering the previous calendar year detailing the following:
- a. the amount of landfill gas produced by the landfill, in scf;
 - b. the amount of landfill gas input to the open flare and/or the enclosed combustor, in scf;
 - c. the number of hours that the open flare and/or the enclosed combustor were operated; and
 - d. the amount of landfill gas, in scf, input to the treatment system that processes the gas for subsequent sale or use.
- These reporting requirements may be satisfied by including and identifying this information in the annual Fee Emissions Report.
- (10) [OAC rule 3745-31-05(A)(3)]
By January 31 of each year, the permittee shall submit an annual report that identifies any of the following occurrences relating to inspections of landfill activities during the previous year:
- a. each day during which an inspection was not performed by the required frequency; and
 - b. each instance when a control measure, that was to be performed as a result of an inspection, was not implemented.
- (11) [Air Toxics Policy]
The permittee shall submit annual reports that include any changes to any parameter or value used in the dispersion model used to demonstrate compliance with the Ohio EPA's



“Review of New Sources of Air Toxic Emissions” policy (“Air Toxic Policy”), through the predicted 1 hour maximum concentration [see terms g)(1)-(2)]. The report should include:

- a. the original model input;
- b. the updated model input;
- c. the reason for the change(s) to the input parameter(s); and
- d. a summary of the results of the updated modeling, including the input changes; and
- e. a statement that the model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect.

f) Testing Requirements

(1) [40 CFR 60.755(a)]

Except as provided in 40 CFR 60.752(b)(2)(i)(B), the specified methods in paragraphs (1)a. through (1)f. of this section shall be used to determine whether the gas collection system is in compliance with 40 CFR 60.752 (b)(2)(ii).

- a. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the Director and Canton City Health Department, Air Pollution Control Division. If k has been determined as specified in 40 CFR 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

- i. For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o * R * [(e^{-kc}) - (e^{-kt})]$$

Where:

Q_m = maximum expected gas generation flow rate, cubic meters per year;

L_o = methane generation potential, cubic meters per megagram solid waste;

R = average annual acceptance rate, megagram per year;



k = methane generation rate constant, year⁻¹;

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less (If the equipment is installed after closure, t is the age of the landfill at installation), years; and

c = time since closure, years (for an active landfill c = 0 and e^{-kc} = 1).

- ii. For sites with known year-to-year solid waste acceptance rate:

$$Q_m = \sum_{i=1}^{i=n} 2 * k * L_o * M_i * (e^{-kt} * i)$$

Where:

M_i = mass of solid waste in the i-th section, megagrams; and

t_i = age of the i-th section, years.

- iii. If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs f)(1)a.i and a.ii. of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs f)(1)a.i. or a.ii. or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

- b. [40 CFR 60.755(a)(2)]

For the purposes of determining sufficient density of gas collectors for compliance with 40 CFR 60.752(b)(2)(ii)(A)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Director and Canton City Health Department, Air Pollution Control Division, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

- c. [40 CFR 60.755(a)(3)]

For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under 40 CFR 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or



performance standards. An alternative timeline for correcting the exceedance may be submitted to the Director and Canton City Health Department, Air Pollution Control Division for approval.

- d. [40 CFR 60.755(a)(4)]
Owners or operators are not required to expand the system as required in paragraph f)(1)c. during the first 180 days after gas collection system startup.
 - e. [40 CFR 60.755(a)(5)]
For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40 CFR 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Director and Canton City Health Department, Air Pollution Control Division for approval.
 - f. [40 CFR 60.755(a)(6)]
An owner or operator seeking to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in 40 CFR 60.759 shall provide information satisfactory to the Canton City Health Department, Air Pollution Control Division as specified in 40 CFR 60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.
- (2) [40 CFR 60.755(c)]
The following procedures shall be used for compliance with the surface methane operational standard as provided in 40 CFR 60.753(d).
- a. After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in term f)(3).
 - b. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
 - c. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A in 40 CFR Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.



- d. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in terms f)(2)d.i. through v. shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 60.753(d).
 - i. The location of each monitored exceedance shall be marked and the location recorded.
 - ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
 - iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in term f)(2)d.v. shall be taken, and no further monitoring of that location is required until the action specified in term f)(2)d.v. has been taken.
 - iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in term f)(2)d.ii. ord.iii. shall be re-monitored 1 month from the initial exceedance, If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in term f)(2)d.iii. ord.v. shall be taken.
 - v. For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Canton City Health Department, Air Pollution Control Division for approval.
- e. The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

- (3) [40 CFR 60.755(d)]
Each owner or operator seeking to comply with the provisions in term f)(2) shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:



- a. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of Appendix A in 40 CFR Part 60, except that "methane" shall replace all references to VOC.
 - b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
 - c. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of Appendix A in 40 CFR Part 60, the instrument evaluation procedures of section 4.4 of Method 21 of Appendix A shall be used.
 - d. The calibration procedures provided in section 4.2 of Method 21 of Appendix A in 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey.
- (4) Fugitive landfill emissions resulting from the biological breakdown of organic wastes shall not exceed the values shown in section b)(1) which are based on calculations described below. These calculations represent the highest emission rates which could occur based on landfill gas emission rates predicted by a maximum annual rate of waste material accepted for disposal of 4,605,000 tons, USEPA's Landfill Gas Estimation program (LANDGEM), AP-42 and other emission factors, a capture efficiency of 75% (the AP-42 default value) for the gas collection and control system, an assumption that 25% of the wastes disposed are inert and are not broken down to create landfill gas, and other assumptions contained in the application.

The resulting emissions were predicted:

a. Emissions Limitation:

Fugitive emissions of non-methane organic compounds (NMOC) shall not exceed 167 TPY.

Applicable Compliance Method:

NMOC: Emissions were predicted by USEPA's LANDGEM model

b. Emissions Limitation:

Fugitive emissions of methane (CH₄) shall not exceed 26,057 TPY.

Applicable Compliance Method:

CH₄: Emissions were predicted by USEPA's LANDGEM model and AP-42, section 2.4.

c. Emissions Limitation:

Fugitive emissions of volatile organic compounds (VOC) shall not exceed 65.0 TPY.



Applicable Compliance Method:

VOC: Emissions were calculated based on predictions from USEPA's LANDGEM model and AP-42 equations.

d. Emissions Limitation:

Fugitive emissions of hazardous air pollutants (HAPs) shall not exceed 23.71 TPY.

Applicable Compliance Method:

HAP: Emissions were calculated based on predictions from USEPA's LANDGEM model and AP-42 equations.

- (5) Compliance with the Emissions Limitations and/or Control Requirements specified in section b)(1) of these terms and conditions that are applicable to the landfill material operations listed below shall be determined in accordance with the following methods:

a. Emissions Limitation:

Particulate emissions (PE) from the MSW landfill operations shall not exceed 1.64 tons per year.

Applicable Compliance Method:

Compliance shall be demonstrated by employing the emission factors derived from the equations in AP-42, Compilation of Air Pollution Emission Factors, Chapter 13.2.4 (January, 1995) for all material handling and storage piles.

Maximum potential uncontrolled emission rates for material handling and storage piles were calculated by using worst case calculations contained in the application based upon material handling being performed to support 15,000 tons per day (TPD) waste acceptance rate (Allowable Maximum Daily Waste Receipt).

b. Emissions Limitation:

Visible fugitive particulate emissions from non-asbestos operations shall not exceed 10 percent opacity as a six-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

No visible emission observations are specifically required to demonstrate compliance with the visible emission limitation but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).



c. Emissions Limitation:

There shall be no visible emissions from asbestos-containing materials during on-site transportation, transfer, unloading, deposition or compacting operations of asbestos-containing materials.

Applicable Compliance Method:

Compliance with the no visible emissions requirement specified in section b)(1) shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

No visible emission observations are specifically required to demonstrate compliance with the visible emission limitation but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).

(6) Compliance with the Emissions Limitations and/or Control Requirements specified in section b)(1) of these terms and conditions that are applicable to the landfill gas control devices shall be determined in accordance with the following methods:

a. Emissions Limitation:

0.80 lb of NMOC/hr and 3.50 tons of NMOC/yr

Applicable Compliance Method:

The hourly emission limitation above was established by using AP-42, Chapter 2.4 Municipal Solid Waste Landfills [11/98] and the following equation:

$$\frac{5,000 \text{ ft}^3}{\text{min}} * \frac{\text{lb} - \text{mol}}{385.4 \text{ ft}^3} * \frac{86 \text{ lbs}}{\text{lb} - \text{mol}} * \frac{595 \text{ ppmv}}{1,000,000} * \frac{60 \text{ min}}{1 \text{ hr}} * (1 - 0.98) = 0.80 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{5,000 \text{ ft}^3}{\text{min}}$ = the restricted maximum landfill gas flow rate to the control devices

$\frac{\text{lb} - \text{mol}}{385.4 \text{ ft}^3}$ = the number of cubic feet in a pound-mole of landfill gas at standard temperature and pressure

$\frac{86 \text{ lbs}}{\text{lb} - \text{mol}}$ = the molecular weight of NMOC (as Hexane) per AP-42, Chapter 2.4

$\frac{595 \text{ ppmv}}{1,000,000}$ = the default concentration for NMOC in inlet gas at No or Unknown co-disposal sites per AP-42, Chapter 2.4

$(1 - 0.98)$ = the typical manufacturer's destruction efficiency (98%) for the TOU and flare control devices



If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-4 and 18 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emissions limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton as shown below. Therefore, provided compliance is shown with the hourly limitation, compliance with the annual limitation will be satisfied.

$$\frac{0.8 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} * \frac{8,760 \text{ hrs}}{\text{yr}} = 3.50 \frac{\text{tons}}{\text{yr}} \text{ NMOC}$$

The actual annual emissions shall be calculated by multiplying the calculated hourly emission rate by the hours of operation per year and dividing by 2,000 pounds per ton.

b. Emissions Limitation:

0.31 lb of VOC/hr and 1.36 tons of VOC/yr

Applicable Compliance Method:

The hourly emission limitation above was established by using AP-42, Chapter 2.4 Municipal Solid Waste Landfills [11/98] and the following equation:

$$\frac{5,000 \text{ ft}^3}{\text{min}} * \frac{\text{lb} - \text{mol}}{385.4 \text{ ft}^3} * \frac{86 \text{ lbs}}{\text{lb} - \text{mol}} * \frac{232 \text{ ppmv}}{1,000,000} * \frac{60 \text{ min}}{1 \text{ hr}} * (1 - 0.98) = 0.31 \frac{\text{lbs}}{\text{hr}}$$

Where:

$$\frac{232 \text{ ppmv}}{1,000,000} = \text{the default VOC content which is equal to 39\% by weight of the NMOC concentration in inlet gas at No or Unknown co-disposal sites per AP-42, Chapter 2.4}$$

If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-4 and 18 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emissions limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton as shown below. Therefore, provided compliance is shown with the hourly limitation, compliance with the annual limitation will be satisfied.

$$\frac{0.31 \text{ lb}}{\text{hr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} * \frac{8,760 \text{ hrs}}{\text{yr}} = 1.36 \frac{\text{tons}}{\text{yr}} \text{ VOC}$$

The actual annual emissions shall be calculated by multiplying the calculated hourly emission rate by the hours of operation per year and dividing by 2,000 pounds per ton.



c. Emissions Limitation:

2.66 lbs of PE/PM₁₀/hr and 11.65 tons of PE/PM₁₀/yr

Applicable Compliance Method:

The hourly emission limitation above was established by using AP-42, Chapter 2.4 Municipal Solid Waste Landfills [11/98] and the following equation:

$$\frac{5,000 \text{ ft}^3}{\text{min}} * \frac{17 \text{ lbs PE/PM}_{10}}{1,000,000 \text{ ft}^3 \text{ methane}} * \frac{0.52 \text{ ppm methane}}{1 \text{ ppm LFG}} * \frac{60 \text{ min}}{1 \text{ hr}} = 2.66 \frac{\text{lbs}}{\text{hr}}$$

Where:

$$\frac{17 \text{ lbs PE/PM}_{10}}{10^6 \text{ ft}^3 \text{ methane}} = \text{the mass of PE/PM}_{10} \text{ per volume of methane per AP-42, Chapter 2.4}$$

$$\frac{0.52 \text{ ppm methane}}{1 \text{ ppm LFG}} = \text{the estimated landfill methane concentration as provided by permittee}$$

If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-5 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emissions limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton as shown below. Therefore, provided compliance is shown with the hourly limitation, compliance with the annual limitation will be satisfied.

$$\frac{2.66 \text{ lbs}}{\text{hr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} * \frac{8,760 \text{ hrs}}{\text{yr}} = 11.65 \frac{\text{tons}}{\text{yr}} \text{ PE/PM}_{10}$$

The actual annual emissions shall be calculated by multiplying the calculated hourly emission rate by the hours of operation per year and dividing by 2,000 pounds per ton.

d. Emissions Limitation:

58.42 lbs of CO/hr and 235.30 tons of CO/yr

Applicable Compliance Method:

The hourly emission limitation above was based on the restricted maximum landfill gas flow of 5,000 scfm being sent to the control devices and the gas treatment system not operating. This limitation was established by adding together the hourly CO emissions from the flare, the hourly CO emissions from the TOU, and the hourly emissions from the combustion of PSA tail gas in Zone 1 of the TOU. The following equations represent the restricted maximum potential to emit CO on an hourly basis, where 5,000 scfm is being combusted by the flare, the TOU is not operating and the gas treatment system is not operating.



The hourly emissions from the flare have been determined using the following equation:

$$\frac{5,000 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}} * \frac{0.37 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 58.42 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{5,000 \text{ ft}^3 \text{ LFG}}{\text{min}}$ = the restricted maximum volume of landfill gas combusted by the flare as demonstrated by recordkeeping with the gas treatment system not operating.

$\frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}}$ = the high heating value utilizing an average methane value of 52% per site data as provided by permittee

$\frac{0.37 \text{ lbs CO}}{10^6 \text{ Btu}}$ = the emission factor for CO for flare operations per AP-42, Chapter 13.5 Industrial Flares [10/91] and as provided by flare manufacturer

The hourly emissions from the TOU have been determined using the following calculation:

$$\frac{0 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.15 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 0 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{0 \text{ ft}^3 \text{ LFG}}{\text{min}}$ = the volume of landfill gas combusted by the TOU (including 0 scfm of supplemental landfill gas to fire Zone 1 of the TOU) as demonstrated by recordkeeping

$\frac{0.15 \text{ lbs}}{10^6 \text{ Btu}}$ = the TOU emission factors for CO per manufacturer's settings based on a destruction efficiency of 98%

The hourly emissions from the combustion of PSA tail gas in Zone 1 of the TOU have been determined using the following calculation:

$$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} * \frac{125.49 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.15 \text{ lb}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 0 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}}$ = the volume of PSA tail gas combusted in Zone 1 of the TOU as demonstrated by recordkeeping

$\frac{125.49 \text{ Btu}}{1 \text{ ft}^3}$ = the high heating value utilizing an average methane value of 12.40% per manufacturer's information

Therefore, the total hourly emissions have been determined by adding the hourly emissions from the flare, the hourly emissions from the TOU, and the hourly emissions from the combustion of PSA tail gas.



$$58.42 \frac{lbs}{hr} + 0 \frac{lbs}{hr} + 0 \frac{lbs}{hr} \approx 58.42 \text{ total } \frac{lbs}{hr} \text{ of CO}$$

If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-4 and 10 of 40 CFR Part 60, Appendix A.

The annual CO emission limitation in term b)(1)e. is based on the restricted maximum potential to emit to avoid Prevention of Significant Deterioration (PSD) requirements. This scenario was equated to an annual average of 4,325 scfm landfill gas being combusted by the flare and the remaining balance of 675 scfm being combusted by the TOU, and the gas treatment system not operating. The annual emission limitation was established by adding together the annual CO emissions from the flare, the annual CO emissions from the TOU, and the annual CO emissions from the combustion of PSA tail gas in Zone 1 of the TOU.

The long term emissions from the flare have been determined using the following calculation:

$$\frac{4,325 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}} * \frac{0.37 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 221.30 \frac{\text{tons}}{\text{yr}}$$

Where:

$$\frac{4,325 \text{ ft}^3 \text{ LFG}}{\text{min}} = \text{the restricted maximum annual average volume of landfill gas combusted by the flare as demonstrated by recordkeeping with the gas treatment system not operating}$$

The long term emissions from the TOU have been determined using the following calculation:

$$\frac{675 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.15 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 14.00 \frac{\text{tons}}{\text{yr}}$$

Where:

$$\frac{675 \text{ ft}^3 \text{ LFG}}{\text{min}} = \text{the volume of landfill gas combusted by the TOU (including 0 scfm of supplemental landfill gas to fire Zone 1 of the TOU) as demonstrated by recordkeeping}$$

The long term emissions from the combustion of PSA tail gas in Zone 1 of the TOU have been determined using the following calculation:

$$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} * \frac{125.49 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.15 \text{ lb}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 0 \frac{\text{tons}}{\text{yr}}$$

Where:



$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} =$ the volume of PSA tail gas combusted in Zone 1 of the TOU as demonstrated by recordkeeping with the gas treatment system not operating

The total annual emissions were established by adding together the annual CO emissions from the flare, the annual CO emissions from the TOU, and the annual CO emissions from the combustion of PSA tail gas.

$$221.30 \frac{\text{tons}}{\text{yr}} + 14.00 \frac{\text{tons}}{\text{yr}} + 0 \frac{\text{tons}}{\text{yr}} \approx 235.30 \text{ total } \frac{\text{tons}}{\text{yr}} \text{ CO}$$

The actual annual emissions shall be calculated by multiplying the sum of the calculated hourly emission rate from the flare, the TOU, and the PSA tail gas by the hours of operation per year and dividing by 2,000 pounds per ton.

g. Emissions Limitation:

10.74 lbs of NO_x/hr and 46.30 tons of NO_x/yr

Applicable Compliance Method:

The hourly emission limitation above was based on the restricted maximum landfill gas flow of 5,000 scfm being sent to the control devices and the gas treatment system not operating. This limitation was established by adding together the hourly NO_x emissions from the flare, the hourly NO_x emissions from the TOU, and the hourly NO_x emissions from the combustion of PSA tail gas in Zone 1 of the TOU. The following equations represent the restricted maximum potential to emit NO_x on an hourly basis, where 5,000 scfm is being combusted by the flare, the TOU is not operating, and the gas treatment system is not operating.

The hourly emissions from the flare have been determined using the following equation:

$$\frac{5,000 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}} * \frac{0.068 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 10.74 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{5,000 \text{ ft}^3 \text{ LFG}}{\text{min}} =$ the restricted maximum volume of landfill gas combusted by the flare as demonstrated by recordkeeping with the gas treatment system not operating

$\frac{0.068 \text{ lbs NO}_x}{10^6 \text{ Btu}} =$ the emission factor for NO_x for flare operations per AP-42, Chapter 13.5 Industrial Flares [10/91] and as provided by the flare manufacturer

The hourly emissions from the TOU have been determined using the following calculation:



$$\frac{0 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}} * \frac{0.06 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 0 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{0 \text{ ft}^3 \text{ LFG}}{\text{min}}$ = the volume of landfill gas combusted by the TOU (including 0 scfm of supplemental landfill gas to fire Zone 1 of the TOU) as demonstrated by recordkeeping

$\frac{0.06 \text{ lbs}}{10^6 \text{ Btu}}$ = the TOU emission factors for NO_x per manufacturer's settings based on a destruction efficiency of 98%

The hourly emissions from the combustion of PSA tail gas in Zone 1 of the TOU have been determined using the following calculation:

$$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} * \frac{125.49 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.06 \text{ lb}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} = 0 \frac{\text{lbs}}{\text{hr}}$$

Where:

$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}}$ = the volume of PSA tail gas combusted in Zone 1 of the TOU as demonstrated by recordkeeping

Therefore, the total hourly emissions have been determined by adding the hourly emissions from the flare, the hourly emissions from the TOU, and the hourly emissions from the combustion of PSA tail gas.

$$10.74 \frac{\text{lbs}}{\text{hr}} + 0 \frac{\text{lbs}}{\text{hr}} + 0 \frac{\text{lbs}}{\text{hr}} = 10.74 \text{ total } \frac{\text{lbs}}{\text{hr}} \text{ of NO}_x$$

If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-4 and 7 of 40 CFR Part 60, Appendix A.

The annual NO_x emission limitation in term b)(1)e. is based on the restricted maximum potential to emit to avoid PSD requirements. This scenario was equated to an annual average of 4,325 scfm landfill gas being combusted by the flare and the remaining balance of 675 scfm being combusted by the TOU, and the gas treatment system not operating. The annual emission limitation was established by adding together the annual NO_x emissions from the flare, the annual NO_x emissions from the TOU, and the annual NO_x emissions from the combustion of PSA tail gas in Zone 1 of the TOU.

The long term emissions from the flare have been determined using the following calculation:

$$\frac{4,325 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3 \text{ LFG}} * \frac{0.068 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 40.68 \frac{\text{tons}}{\text{yr}}$$

Where:



$\frac{4,325 \text{ ft}^3 \text{ LFG}}{\text{min}} =$ the restricted maximum annual average volume of landfill gas combusted by the flare as demonstrated by recordkeeping with the gas treatment system not operating

The long term emissions from the TOU have been determined using the following calculation:

$$\frac{675 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{526.24 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.06 \text{ lbs}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 5.60 \frac{\text{tons}}{\text{yr}}$$

Where:

$\frac{675 \text{ ft}^3 \text{ LFG}}{\text{min}} =$ the volume of landfill gas combusted by the TOU (including 0 scfm of supplemental landfill gas to fire Zone 1 of the TOU) as demonstrated by recordkeeping

The long term emissions from the combustion of PSA tail gas in Zone 1 of the TOU have been determined using the following calculation:

$$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} * \frac{125.49 \text{ Btu}}{1 \text{ ft}^3} * \frac{0.06 \text{ lb}}{10^6 \text{ Btu}} * \frac{60 \text{ min}}{1 \text{ hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 0 \frac{\text{tons}}{\text{yr}}$$

Where:

$\frac{0 \text{ ft}^3 \text{ tail gas}}{\text{min}} =$ the volume of PSA tail gas combusted in Zone 1 of the TOU as demonstrated by recordkeeping with the gas treatment system not operating

The total annual emissions were established by adding together the annual NO_x emissions from the flare, the annual NO_x emissions from the TOU, and the annual NO_x emissions from the combustion of PSA tail.

$$40.68 \frac{\text{tons}}{\text{yr}} + 5.60 \frac{\text{tons}}{\text{yr}} + 0 \frac{\text{tons}}{\text{yr}} \approx 46.30 \text{ total } \frac{\text{tons}}{\text{yr}} \text{ NO}_x$$

The actual annual emissions shall be calculated by multiplying the sum of the calculated hourly emission rate from the flare, the TOU, and the PSA tail gas by the hours of operation per year and dividing by 2,000 pounds per ton.

h. Emissions Limitation:

2.34 lbs of SO₂/hr and 10.25 tons of SO₂/yr

Applicable Compliance Method:

The hourly emission limitation above was established by using AP-42, Chapter 2.4 Municipal Solid Waste Landfills [11/98] and the following equation:

$$\frac{5,000 \text{ ft}^3}{\text{min}} * \frac{\text{lb} - \text{mol}}{385.4 \text{ ft}^3} * \frac{64 \text{ lbs}}{\text{lb} - \text{mol}} * \frac{46.9 \text{ ppmv}}{1,000,000} * \frac{60 \text{ min}}{1 \text{ hr}} = 2.34 \frac{\text{lbs}}{\text{hr}}$$



Where:

$$\frac{64 \text{ lbs}}{\text{lb} - \text{mol}} = \text{the molecular weight of sulfur dioxide}$$

$$\frac{46.9 \text{ ppmv}}{1,000,000} = \text{assumed reduced sulfur compound concentration in the exhaust gas for both control devices (represents worst-case emissions for SO}_2\text{) per AP-42, Chapter 2.4}$$

If required, the permittee shall demonstrate compliance with the hourly emission limitation in accordance with the methods and procedures specified in Methods 1-4 and 6 of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emissions limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton as shown below. Therefore, provided compliance is shown with the hourly limitation, compliance with the annual limitation will be satisfied.

$$\frac{2.34 \text{ lbs}}{\text{hr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} * \frac{8,760 \text{ hrs}}{\text{yr}} = 10.25 \frac{\text{tons}}{\text{yr}} \text{SO}_2$$

The actual annual emissions shall be calculated by multiplying the calculated hourly emission rate by the hours of operation per year and dividing by 2,000 pounds per ton.

i. Emissions Limitation:

1.20 lbs of HCl/hr and 5.30 tons of HCl/yr

Applicable Compliance Method:

The hourly emission limitation above was established by using AP-42, Chapter 2.4 Municipal Solid Waste Landfills [11/98] and the following equation:

$$\frac{5,000 \text{ ft}^3 \text{ LFG}}{\text{min}} * \frac{\text{lb} - \text{mol}}{385.4 \text{ ft}^3} * \frac{36.5 \text{ lb}}{\text{lb} - \text{mol}} * \frac{42.0 \text{ ppmv}}{1,000,000} * \frac{60 \text{ min}}{\text{hr}} = 1.20 \frac{\text{lbs}}{\text{hr}}$$

Where:

$$\frac{36.5 \text{ lbs}}{\text{lb} - \text{mol}} = \text{the molecular weight of hydrogen chloride}$$

$$\frac{42.0 \text{ ppmv}}{1,000,000} = \text{the default HCl concentration in the exhaust gas for both control devices (represents worst-case emissions for HCl) per AP-42, Chapter 2.4}$$

If required, the permittee shall demonstrate compliance with this emissions limitation in accordance with the methods and procedures specified in Methods 1-4 and 26 or 26A of 40 CFR Part 60, Appendix A.

The annual emission limitation was established by multiplying the hourly emissions limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton as shown



below. Therefore, provided compliance is shown with the hourly limitation, compliance with the annual limitation will be satisfied.

$$\frac{1.20 \text{ lbs}}{\text{hr}} * \frac{8,760 \text{ hrs}}{1 \text{ yr}} * \frac{1 \text{ ton}}{2,000 \text{ lbs}} = 5.30 \frac{\text{tons}}{\text{yr}} \text{ HCl}$$

The actual annual emissions shall be calculated by multiplying the calculated hourly emission rate by the hours of operation per year and dividing by 2,000 pounds per ton.

j. Emissions Limitation:

No visible emissions from the open flare, except for periods not to exceed a total of 5 minutes, during any 2 consecutive hours.

Applicable Compliance Method:

Compliance shall be demonstrated through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 22, and procedures specified in 40 CFR Part 60.18.

No Method 22 tests are specifically required to demonstrate compliance with the visible emissions limitation but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).

- (9) Initial performance testing per the requirements specified below shall be conducted to demonstrate that the current control device can operate in conformance with the requirements specified in 40 CFR Part 60.

If subsequently requested or if the permittee installs an additional open flare(s) and/or an enclosed combustor(s) to control the additional predicted landfill gas volume, the permittee shall conduct or have conducted, additional performance test(s) to demonstrate that the flare(s) and/or enclosed combustor(s) can operate in conformance with the requirements specified below:

- a. The testing for any new control equipment installation shall be conducted within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit.
- b. The emission testing shall be conducted to demonstrate compliance with the limitations contained in b)(1) for the control devices. For an open flare, a performance test shall be conducted to demonstrate compliance with the requirements specified in 40 CFR 60.18. The net heating value of the gas being combusted in the flare and the actual exit velocity of the flare shall be determined in accordance with the procedures and methods specified in 40 CFR Part 60.18. The visible emission evaluations shall be conducted in accordance with the procedures specified in section f)(8)h.



- c. For the dual-zone TOU, a performance test required in 60.752(b)(2)(iii)(B), Method 25C or Method 18 of 40 CFR 60 Appendix A shall be used to determine compliance with 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Canton City Health Department, Air Pollution Control Division as provided by 60.752(b)(2)(i)(B). If using Method 18 of Appendix A of 40 CFR Part 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (NMOC_{in} - NMOC_{out}) / (NMOC_{in})$$

Where:

$NMOC_{in}$ = mass of NMOC entering control device

$NMOC_{out}$ = mass of NMOC exiting control device

- e. The permittee shall perform two separate performance tests on the dual-zone TOU.
- i. The first test shall be when Zone A of the TOU is accepting tail gas from the PSA and sufficient landfill gas to combust the tail gas. This shall represent a low flow scenario when Zone A is the only active zone.
 - ii. The second test shall be in Zone B of the TOU, when the TOU is accepting only landfill gas and no tail gas. Zone B will become active once additional gas is added past the maximum design capacity of Zone A. At this time, the flow to Zone A will be dropped to the minimum required value necessary for tail gas destruction, and the remainder of the flow will be diverted to Zone B.
 - iii. Temperatures from each separate zone for each test shall be recorded to demonstrate that the TOU is achieving combustion temperatures in each zone that are at or above the minimum temperatures required by the 40 CFR Part 60.
- f. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible the permittee's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the Canton City Health Department, Air Pollution Control Division. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.



- g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an Intent to Test (ITT) Notification to the Canton City Health Department, Air Pollution Control Division. The ITT Notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the test may result in the refusal to accept the ITT.
 - h. Personnel from the Canton City Health Department, Air Pollution Control Division shall be permitted to witness the tests, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - i. A comprehensive written report on the results of the emissions test shall be signed by the person or persons responsible for the test and submitted to the Canton City Health Department, Air Pollution Control Division within 30 days following the completion of the tests.
- (10) After the installation of a collection and control system in compliance with §60.755, the owner or permittee shall calculate the NMOC emission rate for the purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

$$M_{NMOC} = 0.00189 * Q_{LFG} * C_{NMOC}$$

Where:

M_{NMOC} = mass emission rate of NMOC, megagrams per year

Q_{LFG} = flow rate of landfill gas, cubic meters per minute

C_{NMOC} = NMOC concentration, parts per million by volume as hexane

- a. The flow rate of landfill gas, Q_{LFG} , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of Appendix A of 40 CFR Part 60.
- b. The average NMOC concentration, C_{NMOC} , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of Appendix A of 40 CFR Part 60. If using Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.



- c. The permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Canton City Health Department, Air Pollution Control Division.

g) Miscellaneous Requirements

- (1) The PTI 15-01601 for this emission unit P902 was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the PTI 15-01601 application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the PTI application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC).

The following table summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant:	dibromodichloroethane
Threshold Limit Value (TLV):	100 mg/m ³
Maximum Hourly Emission Rate:	16 lbs/hr
Predicted 1-Hour Maximum Ground-Level Concentration:	14 µg/m ³
MAGLC:	12 µg/m ³

Physical changes to or changes in the method of operation of the emission unit after its install or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. Changes in the composition of the material used or the use of new materials, that would result in the emission of a compound with a lower TLV, as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists: (ACGIH), than the lowest TLV previously modeled;
- b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. Physical changes to the emission unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, changes in emission unit location, etc.).



If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing PTI will not be required, even if the toxic air contaminant emission are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final PTI prior to the change.

- (2) The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emission unit will still satisfy the "Air Toxic Policy":
- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, location of the emission unit, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.